

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-70. (Cancelled).

71. (Currently Amended): A DNA construct for homologous recombination, comprising:

(A) a first ~~recombination~~ flanking DNA sequence and a second ~~recombination~~ flanking DNA sequence,

wherein the first ~~recombination~~ flanking DNA sequence is homologous to a first endogenous DNA sequence in the genome of a mammalian cell, and

the second ~~recombination~~ flanking DNA sequence is homologous to a second endogenous DNA sequence in the genome of the mammalian cell; and

(B) a first heterologous insertion DNA sequence and a second heterologous insertion DNA sequence,

wherein the first heterologous insertion DNA sequence encodes a first gene product that does not confer resistance to a selection agent involved in the selection of transformants,

the second heterologous insertion DNA sequence encodes a second gene product that confers resistance to a selection agent involved in the selection of transformants,

the second heterologous insertion DNA sequence is downstream of the first insertion DNA sequence,

the second heterologous insertion DNA sequence is operatively linked to regulatory elements that direct expression in transformed cells of the second gene product that confers resistance to the selection agent, and

the first gene product is part or all of a receptor;

wherein the first and second heterologous insertion DNA sequences are located between the first and second recombination flanking DNA sequences in the DNA construct; and

wherein, upon introduction of the DNA construct into the mammalian cell, the first flanking DNA sequence recombines with the homologous first endogenous DNA sequence in the genome of the mammalian cell, and the second flanking DNA sequence recombines with the homologous second endogenous DNA sequence in the genome of the mammalian cell, the first and second recombination DNA sequences direct homologous recombination events between the first and second endogenous DNA sequences in the genome of the mammalian cell upon introduction of the DNA construct into the mammalian cell, such that the first and second heterologous insertion DNA sequences are inserted into the genome of the mammalian cell between the first and second endogenous DNA sequences.

72. (Previously Presented): A DNA construct according to claim 71, wherein the receptor is a receptor for an infectious or toxic agent.

73. (Previously Presented): A DNA construct according to claim 71, wherein the receptor is a retinoic acid receptor.

74. (Previously Presented): A DNA construct according to claim 71, wherein the receptor is a 3- β adrenergic receptor.

75. (Previously Presented): A DNA construct according to claim 71, wherein the receptor is an HIV receptor.

76. (Currently Amended): A DNA construct for homologous recombination, comprising:

(A) a first ~~recombination~~ flanking DNA sequence and a second ~~recombination~~ flanking DNA sequence,

wherein the first ~~recombination~~ flanking DNA sequence is homologous to a first endogenous DNA sequence in the genome of a mammalian cell, and

the second ~~recombination~~ flanking DNA sequence is homologous to a second endogenous DNA sequence in the genome of the mammalian cell; and

(B) a first heterologous insertion DNA sequence and a second heterologous insertion DNA sequence,

wherein the first heterologous insertion DNA sequence encodes a first gene product that does not confer resistance to a selection agent involved in the selection of transformants,

the second heterologous insertion DNA sequence encodes a second gene product that confers resistance to a selection agent involved in the selection of transformants,

the second heterologous insertion DNA sequence is downstream of the first insertion DNA sequence,

the second heterologous insertion DNA sequence is operatively linked to regulatory elements that direct expression in transformed cells of the second gene product that confers resistance to the selection agent, and

the first gene product is part or all of an interferon;

wherein the first and second heterologous insertion DNA sequences are located between the first and second recombination flanking DNA sequences in the DNA construct; and

wherein, upon introduction of the DNA construct into the mammalian cell, the first flanking DNA sequence recombines with the homologous first endogenous DNA sequence in the genome of the mammalian cell, and the second flanking DNA sequence recombines with the homologous second endogenous DNA sequence in the genome of the mammalian cell, the first and second recombination DNA sequences direct homologous recombination events between the first and second endogenous DNA sequences in the genome of the mammalian cell upon introduction of the DNA construct into the mammalian cell, such that the first and second heterologous insertion DNA sequences are inserted into the genome of the mammalian cell between the first and second endogenous DNA sequences.

77. (Currently Amended): A DNA construct for homologous recombination, comprising:

(A) a first ~~recombination~~ flanking DNA sequence and a second ~~recombination~~ flanking DNA sequence,

wherein the first ~~recombination~~ flanking DNA sequence is homologous to a first endogenous DNA sequence in the genome of a mammalian cell, and

the second ~~recombination~~ flanking DNA sequence is homologous to a second endogenous DNA sequence in the genome of the mammalian cell; and

(B) a first heterologous insertion DNA sequence and a second insertion DNA sequence,

wherein the first heterologous insertion DNA sequence encodes a first gene product that does not confer resistance to a selection agent involved in the selection of transformants,

the second heterologous insertion DNA sequence encodes a second gene product that confers resistance to a selection agent involved in the selection of transformants,

the second heterologous insertion DNA sequence is downstream of the first insertion DNA sequence,

the second heterologous insertion DNA sequence is operatively linked to regulatory elements that direct expression in transformed cells of the second gene product that confers resistance to the selection agent, and

the first gene product is part or all of an interleukin;

wherein the first and second heterologous insertion DNA sequences are located between the first and second recombination flanking DNA sequences in the DNA construct; and

wherein, upon introduction of the DNA construct into the mammalian cell, the first flanking DNA sequence recombines with the homologous first endogenous DNA sequence in the genome of the mammalian cell, and the second flanking DNA sequence recombines with the homologous second endogenous DNA sequence in the genome of the mammalian cell, the first and second recombination DNA sequences-
~~direct homologous recombination events between the first and second endogenous DNA sequences in the genome of the mammalian cell upon introduction of the DNA construct into the mammalian cell,~~ such that the first and second heterologous insertion DNA sequences are inserted into the genome of the mammalian cell between the first and second endogenous DNA sequences.